

NAME Key

Model Kit Activity

You will soon use a molecular model kit to construct the molecules listed in the table. Before doing so, it is necessary you draw the Lewis structure for the compounds and fill in the first three columns of the table. Then, use the VSEPR model on p.457 to predict the shape of the molecule. Tomorrow, you will construct the molecule and use it to complete the final three columns of the table and the three questions on the back. Have your models checked before disassembling them!

Formula	Name	Lewis Structure	# atoms bonded to central atom	Lone electron pairs	VSEPR Shape	Polar/Nonpolar Bonds	Symmetric Molecule?	Polar Molecule?
H ₂ O	Water		2	2	Bent	2 Polar bonds (O-H) 1.4	Yes	Yes
CHCl ₃	Trichloromethane		4	0	Tetrahedral	C-H 0.4 (non) C-Cl 0.5 (polar)	No	Yes
H ₂ O ₂	Hydrogen Peroxide		2 2	2 2	Bent Bent	O-O nonpolar O-H Polar 1.4	Yes	No
NH ₃	Ammonia		3	1	Trigonal pyramidal	N-H 0.7 (polar)	No	Yes
CH ₄	Methane		4	0	Tetrahedral	C-H 0.4 (non)	Yes	No
CCl ₄	Carbon Tetrachloride		4	0	Tetrahedral	C-Cl 0.5 (polar)	Yes	No
CH ₃ CH ₂ OH	Ethanol		Tetrahedral about the carbon atoms at best			C-H 0.4 (non) C-O 1.0 (polar) O-H 1.4 (polar)	No	Yes
CH ₃ CH ₂ CH ₂ CH ₃	Butane		"	2		C-H 0.4 (non)	Yes	No